Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendments to Parts 1, 2 and 101	)	
of the Commission's Rules	)	
To License Fixed Services	)	WT Docket No. 99-327
at 24 GHz	)	

Comments of Comsearch

Comsearch hereby respectfully submits the following comments to the Notice of Proposed Rulemaking ("NPRM") in the above captioned proceeding.

Comsearch is an independent engineering firm specializing in spectrum management of terrestrial microwave, satellite, and mobile telecommunications systems. Comsearch works with the FCC and actively participates in industry groups such as the National Spectrum Managers Association (NSMA) and the Telecommunications Industry Association (TIA) to develop rules, industry recommendations, and standards to promote efficient use of the radio spectrum. We applaud the Commission's proposal to authorize the 24 GHz service under Part 101. We believe that the Part 101 coordination procedures will be as effective at maximizing spectrum efficiency in the 24 GHz band as they have been in the other fixed microwave bands, and that these procedures can be implemented in the 24 GHz band to benefit all licensees without becoming overly burdensome.

Coordination and Licensing of 24 GHz Stations

After reading the NPRM we are concerned that several of the proposed rules regarding coordination and licensing of 24 GHz stations require clarification. In some cases we believe that the Commission's intentions as discussed in the NPRM are not enacted in the proposed rules.

The NPRM states "we propose that licensees coordinate their facilities whenever their facilities have line-of-sight into other licensees' facilities or are within the same geographic area"[1], and further states "at a minimum, stations whose radio horizon overlaps adjacent areas should contact the relevant licensees regarding coordination of facilities."[2] The first proposal requires specific knowledge of the location of other licensees' nodal and user stations in order to make a determination of whether or not line-of-sight conditions exist. The second proposal only requires knowledge of licensees' geographic areas as listed on their licenses. Thus these two proposals are very different, and only the first makes it into the proposed rules which state "licensees shall coordinate their facilities whenever the facilities have line-of-sight into other licensees' facilities or are within the same geographic area."[3]

Because licensees may interpret the term in different ways, if the line-of-sight condition is to be the coordination trigger, the Commission should add an appropriate technical definition for "line-of-sight" in §101.3. Furthermore, the Commission concludes "that

[1] NPRM at 39.
[2] NPRM at Footnote 97.
[3] NPRM at Appendix B, § 101.509(c).

the 80 km coordination distance currently specified in our rules appears to be too large"[4] but refuses to specify a shorter coordination distance and inserts the line-of-sight criteria instead. It is important to realize that line-of-sight conditions may exist at significant distances, perhaps even *in excess of* 80 km. In conjunction with the line-of-sight criteria, the Commission could use industry input to establish a distance beyond which coordination is *not* required, even under line-of-sight conditions. We believe that it is possible to establish such a distance beyond which harmful interference is extremely unlikely or impossible. Finally, we believe that licensees may find coordination based on the determination of line-of-sight among facilities to be too complex. They may prefer a radius requirement or to simply comply with the existing language of § 101.103(d) which requires coordination with those "whose facilities could affect or be affected by the new proposal in terms of frequency interference…"[5]

The Commission proposes "to replace the individual licensing of nodal stations with a coordination requirement. Such coordination would be required with co-channel 24 GHz licensees in adjacent geographic areas and with adjacent channel 24 GHz licensees in adjacent geographic areas, as well as the same or overlapping area."[6] If it is the Commission's intention to require coordination of co-channel and adjacent channel systems only, then the language of §101.509(c) should more clearly state the requirement as suggested by §101.509(a) and (b). To accomplish this, we propose that §101.509(c) be modified to say "Licensees shall coordinate their facilities *with other co-channel and*

[4] NPRM at 39.
[5] See 47 C.F.R § 101.103(d)(1)
[6] NPRM at 39.

adjacent channel licensees whenever the facilities have line-of-sight into *the* other licensees' facilities or are within the same geographic area." In the NPRM, the Commission "conclude(s) that a requirement to coordinate those 24 GHz nodal stations located within the boundaries of a licensed SMSA or other geographic licensing area prior to putting them into operation would be sufficient…"[7] which suggests that only nodal stations require coordination. However, the proposed rules require coordination of the licensee's "facilities" which appears to mean all fixed stations including nodal and user stations. The Commission should rectify this apparent discrepancy. While requiring additional effort, coordination of user stations as well as nodal stations will enhance spectral efficiency in the 24 GHz band.

The Commission proposes that in lieu of individual licensing of nodal stations, all 24 GHz fixed stations would be authorized under the system license. Proposed § 101.525 states:

> (a) A licensee using the 24 GHz band may construct and operate any number of fixed stations anywhere within the area authorized to serve without prior authorization …
>
> (b) Whenever a licensee constructs or makes system changes as described in paragraph (a), the licensee is required to notify the Commission within 30 days of the change under § 101.61 and include a statement of the technical parameters of the changed station.

Thus any construction or alteration of nodal or user stations appears to require the filing of a "statement of the technical parameters" with the Commission. Under § 101.61, licensees traditionally file a completed application form for the modified facilities. The

[7] NPRM at 39.

Commission should clarify whether the required "statement of technical parameters" is the FCC 601 form or some other statement.

If it is truly the Commission's intention to collect this technical information, then it should be made available to other licensees. Coordination under the proposed line-of-sight criteria requires specific knowledge of the technical parameters of other licensees facilities including the location of all nodal and user stations. Unless information about existing facilities is available, coordination between adjacent areas would never be triggered under the line-of-sight requirement. The Commission says "in the event that there is no 24 GHz licensee immediately available in an adjacent, same or overlapping area, the licensee must be prepared to coordinate its stations in the future in order to accommodate other licensees to ensure cooperative and effective use of the spectrum in each area."[8] In order to thus "accommodate other licensees", the Commission should collect and make available the desired technical information for all facilities *in operation at the time the rules are adopted* as well as for all subsequent additions and modifications.

Furthermore the proposed rules do not seem to address the coordination and licensing requirements when facilities are removed from operation. Under the process that the Commission has proposed, either § 101.525 should be modified to specifically require coordination and filing of a "statement of technical parameters" for the deletion of facilities or §101.61(c)(10) should be modified to add reference to the 24 GHz band.

[8] NPRM at 39.

Although we believe that effective interference analysis requires detailed knowledge of the parameters of the 24 GHz nodal and user stations, the Commission may find collecting technical information on 24 GHz systems to be burdensome. At the same time licensees may find providing the information to be time-consuming and undesirable due to a lack of confidentiality. The proposed rules advise that "licensees are encouraged to develop operational agreements with relevant licensees in the same or adjacent areas."[9] Effective operational agreements could reduce or eliminate the need to file technical information with the Commission. In the spirit of cooperation that the Commission wishes to foster, an industry process could be developed where independent third parties would collect and analyze the technical data on behalf of the 24 GHz licensees. Thus coordination under Part 101 could be performed without revealing specific system parameters to neighbors who may also be competitors.

Antenna Standards

The Commission "request(s) comment on any other changes in the existing Part 101 rules that might be useful or necessary for the 24 GHz band."[10] We believe that the directional antenna standards of §101.115 should be updated for this band to allow the use of 1 foot diameter parabolic antennas. Under the current rules, directional antennas must meet either a 2.2 degree beamwidth or a 38 dBi gain requirement, neither of which can be met by a 1 foot parabolic antenna. The beamwidth requirement should be relaxed to 2.8 degrees to allow the use of these antennas. At the same time the pattern standards should

[9] NPRM at Appendix B, § 101.509(c).

be increased to require a 45 dB front-to-back ratio for Category B and a 60 dB front-to-back ratio for Category A. Current 1 foot Standard and High Performance antennas, respectively, can meet these standards, and spectral efficiency would be improved much more by increasing the pattern requirements to the rear of the antenna than it would be reduced by the beamwidth increase. The ability to use small unobtrusive antennas at user stations will enhance the growth of the 24 GHz service.

Respectfully Submitted,

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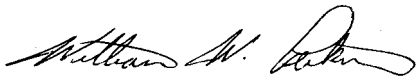

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[10] NPRM at 15.